

From: Ben Cheng Sent: 2/26/2010 11:12 AM
 To: [-] Brian Swetland
 Cc: [-] Chih-Chung Chang; Mike Chan; Jason Parks; Iliyan Malchev; Android Kernel
 Bcc: [-]
 Subject: Re: [android-kernel] Re: major fault latency

I'm working on a micro benchmark to shmoo the memory footprint vs page fault lat

On Fri, Feb 26, 2010 at 11:10 AM, Brian Swetland <swetland@google.com> wrote:

Is our only metric on the new kernel being "slower" this benchmark to randomly read pages from a mmap'd file?

On Fri, Feb 26, 2010 at 10:49 AM, Chih-Chung Chang <chihchung@google.com> wrote:

Yes, that's the result of the specific benchmark.

On Fri, Feb 26, 2010 at 10:48 AM, Mike Chan <mikechan@google.com> wrote:

> Are you saying that donut kernel was faster than froyo even on
 > performance governor?

>

> 528 is right, I gave it a little bump for froyo

>

>

> On Thursday, February 25, 2010, Chih-Chung Chang <chihchung@google.com> wrote:

>> After the command I checked

>> /sys/devices/system/cpu/cpu0/cpufreq/scaling_cur_freq

>> donut is 384MHz, and froyo is 528MHz. Is that right?

>>

>> On Thu, Feb 25, 2010 at 3:57 PM, Chih-Chung Chang <chihchung@google.com> wrote:

>>> Before the test I did a

>>> adb shell 'echo performance >

>>> /sys/devices/system/cpu/cpu0/cpufreq/scaling_governor'

>>> Is this good enough?

>>>

>>> On Thu, Feb 25, 2010 at 3:55 PM, Mike Chan <mikechan@google.com> wrote:

>>>> I will look some cpufreq

>>>> - Mike

>>>>

>>>>

>>>> On Thu, Feb 25, 2010 at 3:33 PM, Chih-Chung Chang <chihchung@google.com>

>>>> wrote:

>>>>

>>>>> I just used fastboot to boot the donut kernel with a froyo build, and

>>>>> the numbers lowered!

>>>>>

>>>>> Another thing I don't understand is I tried to use read() instead of

>>>>> mmap(), and it's much faster (they are similar on my desktop).

>>>>>

>>>>> On Thu, Feb 25, 2010 at 3:21 PM, Ben Cheng <bccheng@google.com> wrote:

>>>>> > I think another thing Chih-Chung observed was it takes longer to serve a

>>>>> > page fault on Froyo (kernel) than Donut.

>>>>>

>>>>> > -Ben

>>>>>

>>>>> > On Thu, Feb 25, 2010 at 3:15 PM, Brian Swetland <swetland@google.com>

>>>>> > wrote:

>>>>>

>>>>>

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>>>> >> As Chih-Chung points out, if we have less memory (because everything's
>>>> >> bigger) we're going to take more pagefaults.
>>>> >>
>>>> >>
>>>> >> On Thu, Feb 25, 2010 at 2:59 PM, Jason Parks <jparks@google.com> wrote:
>>>> >>
>>>> >>> We do have a new kernel. Iliyan, can you look into why this has gotten
>>>> >>> slower in Froyo?
>>>> >>> On Thu, Feb 25, 2010 at 2:43 PM, Chih-Chung Chang
>>>> >>> <chihchung@google.com>
>>>> >>> wrote:
>>>> >>>
>>>> >>>> Hi,
>>>> >>>>
>>>> >>>> Ben mentioned that maybe the slowness of froyo/sapphire is due to not
>>>> >>>> enough memory.
>>>> >>>> I checked /proc/pid/stat after a program starts and indeed on froyo
>>>> >>>> we
>>>> >>>> have more major faults. So that's at least part of the reason why
>>>> >>>> it's
>>>> >>>> slower.
>>>> >>>>
>>>> >>>> I wanted to know what's the cost of a major fault, so I did a program
>>>> >>>> to mmap a file and randomly pick 20 addresses and see how long does
>>>> >>>> it
>>>> >>>> take to read from those addresses. The results are below:
>>>> >>>>
>>>> >>>> =====
>>>> >>>> opal-userdebug 1.6 DMD64 21415 test-keys
>>>> >>>>
>>>> >>>> /system/app/LatinIME.apk
>>>> >>>> 23957 24627 23865 24414 24506 61 20661 61 61 20446 13886 16022 19104
>>>> >>>> 30 15320 6653 0 5158 8056 61
>>>> >>>> delta minflt = 19, delta majflt = 14
>>>> >>>> average of values >= 500: 17619
>>>> >>>>
>>>> >>>> /data/dalvik-cache/system@framework@core.jar@classes.dex
>>>> >>>> 92 13550 61 22338 11811 61 4548 8911 61 3784 61 30 31 5218 14679 4639
>>>> >>>> 13641 61 61 61
>>>> >>>> delta minflt = 24, delta majflt = 10
>>>> >>>> average of values >= 500: 10311
>>>> >>>>
>>>> >>>> /system/framework/framework-res.apk
>>>> >>>> 16662 23926 23529 31 16144 22491 20538 61 31 18005 61 61 61 8911
>>>> >>>> 61
>>>> >>>> 30 31 0 61
>>>> >>>> delta minflt = 25, delta majflt = 8
>>>> >>>> average of values
>
> --
> - Mike
>

```